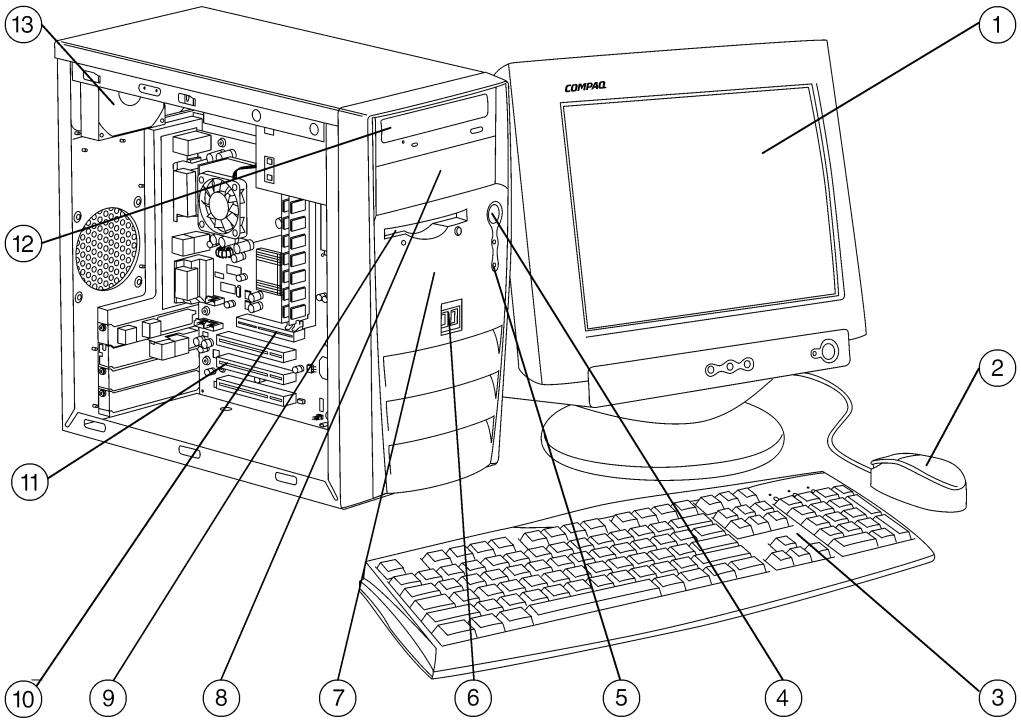
Overview

What's New

- Intel® 845G chipset
- 533-Mhz Front Side Bus
- DDR Synch Dram PC2100 (266-MHz) Memory
- USB 2.0
- 6 USB ports standard, including 2 front access ports
- Integrated Intel Extreme Graphics - 4X AGP

At A Glance

- Intel®Pentium® 4 and Celeron™ processors
- SMART III Ultra/ATA Hard Drives
- Microsoft XP Home or XP Pro operating systems
- Integrated Intel PRO/100 NIC
- Energy Star compliant with energy-saving features
- Protected by Compaq Services, including a 1-1-1 standard warranty. Terms and conditions vary by country. Certain restrictions and exclusions apply.



1. Compaq 5500 CRT Monitor (sold separately)
2. 2-Button Scroll Mouse
3. 104-Key Windows Keyboard
4. Dual-State Power Button
5. LED Indicators
6. USB Ports
7. Ultra ATA/100 Hard Drive
8. 5-1/4 Inch Expansion Bay
9. 1.44-MB Diskette Drive
10. AGP Graphics Slot
11. PCI Expansion Slots
12. 48X CD-ROM Drive
13. 250-Watt Power Supply

Standard Features – Pre-Configured Components

Compaq Evo D310v Models with Intel 845G Chipset

Processor and Speed *One of the following*	**Intel Celeron Processors** 1.7-GHz with 400-MHz Front Side Bus	**Standard L2 Cache**	128-KB Integrated ECC
	Intel Pentium 4 Processors 1.8-GHz with 400-MHz Front Side Bus	**Standard L2 Cache**	256-KB Integrated ECC
Hard Drives	20-GB 5400 rpm SMART III Ultra ATA/100 40-GB 5400 rpm SMART III Ultra ATA/100		
Standard Memory	128-MB DDR Synch Dram PC2100 (266-MHz) Non ECC 256-MB DDR Synch Dram PC2100 (266-MHz) Non ECC		
Removable Storage	1.44-MB Diskette Drive		
Optical Storage	48X CD-ROM Drive 40X CD-RW Drive		
Keyboard	Basic Windows Keyboard Easy Access Keyboard (available in EMEA only)		
Mouse	2-Button Scroll Mouse		
Audio	Integrated AC '97 Audio		
NIC	Integrated Intel PRO/100 Network Connection		
Graphics	Intel Extreme Graphics (integrated with Intel 845G chipset)		
Operating System *One of the following*	Microsoft Windows XP Home Microsoft Windows XP Professional Microsoft Windows 2000 SP2		
Software	Norton Internet Security Norton AntiVirus 2002		

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

Base Unit Contents	uATX microtower chassis	
	Intel processor: Celeron or Pentium 4	
	Active heatsink	
	Systemboard with Intel 845G chipset, Intel Pro/100 NIC, integrated graphics and audio	
	(2) ATA data cables	
	Diskette drive with cable	
	20.0GB 5400rpm HDD	
	Optical Disc drive	
	DDR Synch DRAM PC2100 memory DIMM	
	Product Documentation on CD	
	Microsoft operating system CD	
	Compaq Restore CD	
	Power Cord	
	Keyboard (PS/2)	
	Mouse (PS/2)	
Expansion Capability	Memory Expansion Slots (Non-ECC)	2 DIMM's - DDR Synch Dram PC2100 (266-MHz)
	Maximum Memory	2-GB

Note: Intel 845G Chipsets support DDR Synch Dram PC1600 (200-MHz) Non-ECC and DDR Synch Dram PC2100 (266-MHz) Non-ECC Memory only. Compaq PCs ship with DDR Synch Dram PC2100 (266-MHz) Non-ECC Memory.

Slots	PCI	3 full-height slots on PCA
	AGP	1 AGP 4X, 1.5V on PCA
Bays	Total Bays = 4	
	Internal	(1) 3.5 inch Hard Drive
	External:	(2) 5.25 inch half-height
	Floppy:	(1) 3.5 inch Diskette Drive
Wireless Support	PCI card or external USB	
USB Support	(2) Front USB 2.0 Ports	
	(4) Rear USB 2.0 Ports	
Interfaces (Legacy)	Parallel Port	1
	Serial Port	1
	PS/2 Keyboard	1
	PS/2 Mouse	1
	VGA Adapter	1

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

Chassis Dimensions (H x W x D)	Centimeters	36.83 x 17.48 x 42.04 centimeters
	Inches	14.5 x 6.88 x 16.55 inches
Chassis Weight (kgs/lbs)	System Weight	10.92 kilograms/23.8 pounds
	Weight Supported	45.5 kilograms/100 pounds
System Memory	Type/Speed	DDR Synch Dram PC2100 (266-MHz) Non-ECC
	Maximum Memory	2-GB
	Memory Parity	Not Needed for non-ECC
	ECC Memory	Not Supported by chipset
	Serial Presence Detect Support	Supported

Note: Maximum memory of 2-GB DDR Synch Dram can be achieved when 1-GB memory modules become available.

Supported Features	Processor	Intel Pentium 4 and Celeron / Socket N - 478
	CPU Bus Speed Supported	400-MHz / 533-MHz FSB
	Memory Type Supported	DDR (ECC not supported by Chipset)
	Memory Speed Supported	DDR Synch Dram PC1600 (200-MHz) and PC2100 (266-MHz) Non-ECC
	SPD Support	Yes
	Hard Drive Interfaces Supported	SMART III Ultra ATA/100/66/33
	Hard Drive Controller (PCI) Supported	SMART III Ultra ATA/100/66/33
Intel® Pentium® 4	Coprocessor	Integrated
	CPU Socket Type/Number	Socket N 478 pin
	CPU Package	FC-PGA2
	Front Side Bus Speed	400-MHz or 533-MHz
	Standard L2 Cache	256-KB ECC or 512-KB ECC depending on processor speed
	L2 Cache Architecture / Speed	Full core clock speed
	Cache Upgradeable To	Not upgradeable - Integrated into Processor
Intel® Celeron™	Coprocessor	Integrated
	CPU Socket Type/Number	Socket N 478 pin
	CPU Package	FC-PGA2
	Front Side Bus Speed	400-MHz
	Standard L2 Cache	128-KB ECC depending on processor speed
	L2 Cache Architecture / Speed	Full core clock speed
	Cache Upgradeable To	Not upgradeable - Integrated into Processor

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

System Board	Architecture	P4 / PCI / AGP 4X
	Chipset	Intel 845G Chipset
	I/O Controller	Super I/O 3
	System Board Form Factor	Standard uATX
	Processor Socket - 478 Pin ZIF	Yes
	DIMM Connectors (2.5V)	Yes (2)
	AGP Connector (1.5V)	Yes (1)
	Integrated AGP Graphics	Yes
	PCI Connectors (5.0V)	Yes (3 on motherboard)
	Flash ROM	Yes
	Audio	Yes
	CD ROM IN (Audio)	Yes
	Clear CMOS	Yes
	CPU Fan Header	Yes
	Chassis Fan Header	Yes
	Chassis Speaker Header	Yes
	CMOS Battery Holder - Lithium	Yes
	Hood Lock Header	No
	Hood Sense Header	No
	Multibay Header	No
	Multport Header	No
	NIC (PRO/100 VM)	Yes
	Wake-On-Lan®	Yes
	Alert-On-LAN®	No
	Power Supply Header	Yes
	Power Switch, Power LED & Hard Drive LED Header	Yes
	Password Clear Header	Yes
	Riser Connector	No
	SCSI LED Header	Yes
	Boards that connect to System Board	None

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

Chassis	Color	Carbon
	Supported System Board Form Factor	Standard uATX
	Flash ROM	Yes
	Cooling Solutions Supported	
	Power Supply Fan (Variable Speed)	Yes
	Processor Fan-Heatsink (Variable Speed)	Yes
	Chassis Fan	Yes
	Slots Supported	3 Full-height, half-length PCI slots
		1 AGP
	Front I/O	2 USB
	Rear I/O	Standard ATX I/O Connectors
	Internal Speaker	No
	Power Supply	ATX Power Supply – PFC/Non PCF with a 115v/230v line switch
Interfaces	I/O Chip	Super IO 3
	Serial Port / UART Type	One Serial Port / SN75185
	Parallel Port	One Parallel Port
	USB (2.0)	6 ports (USB 2.0) total 4 rear/2 front
	Infrared Port	No
	Network	RJ-45
	Keyboard	Yes (PS2)
	Mouse	Yes (PS2)
	Multibay	No
	Multiport	No
	Video	Yes
	Audio	Yes

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

Power Supply	Power Supply	ATX Power Supply – PFC/Non PCF with a 115v/230v line switch
	Full Ranging Input (No Line Select Switch)	No
	Active Power Factor Correction (APFC) (Input Current is nearly 1/2 a non-APFC PS)	No
	Passive Power Factor Correction (PFC)	Yes (with line switch set to 230v - No PFC in 115v line switch position)
	Operating Voltage Range	90 to 132VAC, or 180 to 264VAC
	Rated Voltage Range	100 to 127 VAC, or 200 to 240VAC
	Rated Line Frequency	50-60 Hz
	Operating Line Frequency Range	47-63 Hz
	Rated Input Current	6A @ 100VAC/3A @ 200VAC
	Maximum Rated Power	250W
	Heat Dissipation	Max (338W input): 1061 BTU/hr Typical (65W input): 222 BTU/hr Max (269W input): 267 kg-cal/hr Typical (65W input): 56 kg-cal/hr
	PS Fan	92mm fan integrated in power supply - variable speed for optimum acoustics
	Processor Fan	Variable speed fan

Environmental and Mechanical Engineering Support Center		http://env-webserver.ccm.cpqcorp.net/EMESC/default.htm

Power Conservation 'Energy Saver'	Energy Star Compliant	Yes
	APM 1.2 Support	Yes
	Screen Blanking	Yes
	Hard Disk 'Idle' Mode	Yes
	System Idle Mode	Yes
	Cache Memory Power-Down	No
	Blue Angel Compliant (<5w in S5--Power Off)	Yes
	Power Consumption in ES Mode - Suspend to RAM (S3) (Instantly Available PC)	~2W
	Processor/Cache Memory Power-Down (S3)	Yes
	CD-Rom Spins Down when not in use	Yes

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

ROM Features	Instantly Available PC (Suspend to RAM - S3)	Yes
	ROM Based F10 Setup	Yes
	Remote System Installation via F12 (PXE)	Yes
	Failsafe Boot Block ROM	Yes
	Emergency ROM Flash Recovery with Video	Yes
	CMOS Archive and CMOS Restore	Yes
	Save and Restore CMOS Setup via Diskette	Yes
	Auto Setup when New Hardware Installed	Yes
	Serial, Parallel, USB Enable/Disable Port Control	Yes
	Removable Media Write / Boot Control	Yes
	Remote Boot from Server	Yes
	Network Server Mode	Yes
	Power-On Password	Yes
	Setup Password	Yes
	Memory Change Alert (Requires Insight Management Agent)	Yes
	Thermal Alert (Requires Insight Management Agent)	Yes
	Cover Removal Alert (Requires Insight Management Agent)	No
	Master Boot Record Security	Yes
	Remote ROM Flash	Yes
	Remote Wakeup and shutdown	Yes
	Power Management	Yes
	ACPI	Yes
	SMBIOS 2.3 x DMI (Desktop Management Interface)	Yes
	Wired for Management 2.0 Support	Yes

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

System Environmental Specs	Acoustics: Advanced Power Management - On	Idle (HDD spinning but not seeking) = 26 dB (pending final testing with production equipment)	
	Shock	Operating (*Using 11ms half-sine shock pulse)	5 G's*(with NO damage being incurred)
		Non-Operating (*Using 11ms half-sine shock pulse)	10 G's*, positive and negative directions front to back axis: 20 G's* in all other axes.
	Vibration	Operating	Random vibration at 0.000215 G^2/Hz, 10Hz to 300Hz, (0.25G's nominal).
		Non-Operating	Random vibration at 0.0005 G^2/Hz, 10Hz to 500Hz, (0.5G's nominal).
	Relative Humidity	Operating	10% to 90% relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
		Non-operating	5% to 95% relative humidity (Rh), 38.7°C maximum wet bulb temperature, non-condensing.
	Altitude Max (un-pressurized)	Operating	0 to 10,000 feet – This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min.
		Non-operating	0 to 30,000 ft 9,144 m - Maximum allowable altitude change rate is 1500 ft/min
	Environmental and Mechanical Engineering Support Center (EMESC) - Intranet Web Site	http://env-webserver.ccm.cpqcorp.net/EMESC/default.htm	
Software	Preinstalled Software	Windows 2000	No (drivers provided on http:\\www.Compaq.com)
		Windows XP Pro	Yes
		Windows XP Home	Yes
		Microsoft Internet Explorer	Yes
Initial Configuration and Deployment	Support Software CD		Yes
	Compaq Software Restore CD		Yes
Standard Security Features	Serial, Parallel, Audio, USB Enable/Disable Port Control		Yes
	Removable Media Write / Boot Control		Yes
	Power-On Password		Yes
	Setup Password		Yes
System Software Updating	Remote ROM Flash		Yes
	ROM Based Setup (F10) and Start-up Diagnostics		Yes
	Support Software CD & website		Yes

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

Serviceability Features - System	Dual Color Power LED on Front of Computer	Yes (Indicates Normal Operations and Fault Conditions)
	Blinking Diagnostic Keyboard LED Codes	Yes
	Diagnostic LED Explanation Table	Yes (See Illustrated Parts Map)
	Compaq Diagnostic for Windows Software	Yes
	Compaq Configuration Record Software	Yes
	Over-Temp Warning on Screen (Requires IM Agents)	Yes
	Compaq OS CD (Restore OS CD)	Yes
	Compaq Restore CD (Restore Drivers CD)	Yes
	Flash ROM	Yes
	3.3V Aux Power LED on System PCA	Yes
	Dual Function 5V Aux Power LED (ON) / PS_ON LED (OFF) on System PCA	Yes
	Diagnostic Power Switch LED on board	Yes (On when power switch pushed)
	Clear Password Jumper	Yes
	Clear CMOS Button	Yes
	CMOS Battery Holder for easy Replacement	Yes
	Processor ZIP Socket for easy Upgrade	Yes
	DIMM Connectors for easy Upgrade	Yes
	NIC LEDs (integrated) (Green & Amber)	Yes Green On = Network Activity; Amber On = 100Base-TX; Amber Off = 10Base-TX)
Serviceability Features – Web Based	Support Home - Help for Drivers, ROM, and Software, Documentation	http://www.compaq.com/support/home/
	Software & Drivers	http://www.compaq.com/support/home/
	Ask Compaq	http://www.compaq.com/support/home/
	Reference Library (Product Documents)	http://www.compaq.com/support/home/
	Forums and Communities	http://www.compaq.com/support/home/
	Warranty Information	http://www.compaq.com/support/home/
	Your System Hardware Look up your Hardware Auto Serial Number Detect	http://www3.compaq.com/support/parts/
	Support Tools	http://www3.compaq.com/support/tools/
	Contact Support	http://www3.compaq.com/support/parts/
	Compaq Active Update Support	http://www.compaq.com/products/servers/management/activeupdate/
	End User Replaceable Parts Program	http://www.compaq.com/support/eurp/
	Product Change Notification (PCN)	http://web14.compaq.com/pcn/pcnbridge.asp
	ActiveUpdate	http://web14.compaq.com/pcn/pcnbridge.asp

Standard Features – Base Unit Details

Compaq Evo D310v Models with Intel 845G Chipset

Serviceability Features of Chassis	Dual Color Power and HD LED - To Indicate Normal Operations and Fault Conditions	Yes
	Diagnostic LED Explanation Table	Yes (See Illustrated Parts Map)
	Smart Cover Sensor	No
	Smart Cover Lock	No
	Front power switch	Yes
	Green Pull Tabs, and Quick Release Latches for easy Identification	Yes
	System memory can be upgraded without removing the system board or any internal components	Yes
	Tool-less Hood Removal	Yes (with captive thumbscrews)
	Tool-less Hard Drive, CD & Diskette Removal	Yes
	Tool-less System Board Removal	No
	Industry Standard CD Bay	Yes
	Towerable	N/A
	Universal Tower Stand	N/A
Serviceability Features – Hard Drives	Drive Self Tests (DPS)	Yes
	DPS Access through F10 Setup during Boot	Yes
	DPS Access through Diagnostics for Windows	Yes
	SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	Yes
	SMART I - Drive Failure Prediction	Yes
	SMART II - Off-Line Data Collection	Yes
	SMART III - Off-Line Read Scanning with Defect Reallocation	Yes
Service and Support	On-site Warranty and Service Note 1: This three-year, limited warranty and service offering delivers three years of on-site, next business-day Note 2 service for parts and labor and includes free telephone support Note 3 24 x 7. Global coverage Note 2 ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering. Note 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply. Note 2: On-site service may be provided pursuant to a service contract between Compaq and an authorized Compaq third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country. Note 3: Technical telephone support applies only to Compaq-configured, Compaq and Compaq-qualified, third-party hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.	

After-Market Options

Communications	***Modems***	
	Lucent V.90 56K PCI Win Modem	239137-xxx
Graphics	***2D Graphics***	
	NVIDIA Vanta 16-MB SDRAM AGP	239317-B21
	NVIDIA GeForce2 MX200 16-MB SDRAM AGP	251954-B21
	NVIDIA GeForce MX400 32-MB SDRAM AGP	227003-B21
	NVIDIA M64 PRO 32-MB SDRAM AGP	216080-B21
Hard Drives & Controllers	***SMART III Ultra ATA/100 Hard Drives with Drive Protection System*** *(DPS)*	
	80-GB 7200 rpm SMART III Ultra ATA/100 Hard Drive with DPS	250020-B21
	40-GB 7200 rpm SMART III Ultra ATA/100 Hard Drive with DPS	201066-B21
	20-GB 7200 rpm SMART III Ultra ATA/100 Hard Drive with DPS	251974-B21
	Note: SMART III fault notification features are not supported in BIOS on this platform.	
	Cables	
	2 Device IDE Cable	260626-B21
	Note: Cable required with D300v when configured with a 2nd removable storage drive	
Input/Output Devices	***Keyboards***	
	Compaq PS/2 Easy Access Keyboard (carbon/silver)	267145-008
	Compaq USB Smart Card Keyboard (carbon/silver)	267147-008
	Compaq Cordless Desktop (Keyboard and Mouse)	251385-xx8
	Mice	
	Compaq PS/2 Scroll Mouse (carbon)	170299-B22
	Compaq USB Scroll Mouse (carbon)	195255-B25
	Compaq USB Optical Scroll Mouse (carbon/silver)	265985-B21
Memory (DIMMs)	***266-MHz (PC2100) DDR DIMMs Non-ECC***	
	1-GB DDR Synch Dram PC2100 (266-MHz) Non-ECC	267908-B21
	512-MB DDR Synch Dram PC2100 (266-MHz) Non-ECC	267907-B21
	256-MB DDR Synch Dram PC2100 (266-MHz) Non-ECC	267906-B21
	128-MB DDR Synch Dram PC2100 (266-MHz) Non-ECC	267905-B21

After-Market Options

Monitors

TFTs

Compaq TFT8030 Monitor (18-inch, Two-tone)	234362-001
Compaq TFT8030 Monitor (18-inch, Baseless)	250199-001
Compaq TFT5030 Monitor (15-inch, Two-tone)	228134-001
Compaq TFT5030 Monitor (15-inch, Baseless)	250198-001
Compaq TFT5015 Monitor (15-inch, Two-tone)	234044-001

CRTs

Professional Series

Compaq P1220 CRT Monitor (21-inch, Two-tone)	244374-xxx
Compaq P1210 CRT Monitor (21-inch, Two-tone)	230538-001
Compaq P920 CRT Monitor (19-inch, Two-tone)	244375-xxx
Compaq P910 CRT Monitor (19-inch, Two-tone)	230535-001
Compaq P720 CRT Monitor (17-inch, Two-tone)	244373-xxx

Value Series

Compaq V720 CRT Monitor (17-inch, Two-tone)	232944-xxx
Compaq V510 CRT Monitor (15-inch, Two-tone)	228113-xxx

Standard Series

Compaq S920 CRT Monitor (19-inch, Two-tone)	240326-xxx
Compaq S710 CRT Monitor (19-inch, Carbon)	154499-002
Compaq S720 CRT Monitor (17-inch, Two-tone)	239287-xxx
Compaq M720 CRT Monitor (17-inch, Two-tone)	238994-xxx
Compaq S510 CRT Monitor (15-inch, Carbon)	168636-002

Multimedia

Labtec Spin-22 Speakers (carbon)	246637-001

Optical Drives

DVD-ROM Drives

16X/40X DVD-ROM Drive Read +/- (carbon)	280625-B22
16X/40X DVD-ROM Drive with RAM Read (carbon)	237495-B22

Note: MPEG playback software is included with all DVD-ROM Drives. Not supported with Windows NT.

CD-ROM Drives

48X Max CD-ROM Drive (carbon)	187217-B22

CD-RW Drives

40X/12X/40X CD-RW Drive (carbon)	268985-B22

Security

BioTouch USB Fingerprint Reader – (carbon)	240238-B21

Memory

DDR SYNCH DRAM DIMM NON-ECC MEMORY

It is not necessary to add memory in pairs or kits. Memory upgrades are accomplished by adding single or multiple DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations.

845G chipset (128-MB)

DDR SYNCH DRAM DIMM NON-ECC MEMORY

STANDARD MEMORY

128-MB DIMM Standard

MAXIMUM MEMORY

Intel 845G Chipset supports up to 2-GB of DDR SYNCH DRAM. Platform can utilize 2-GB of memory when 1-GB DIMMs are available with the installation of optional DDR SYNCH DRAM Memory Kits.

Memory		Slot	
		1	2
Standard	128-MB	128-MB	Empty
Maximum Memory when 1-GB available	2-GB	1-GB	1-GB

Note: All Compaq Evo D310v Desktop models contain two DIMM slots, but can only be upgraded to a maximum of 2-GB when 1-GB DDR SYNCH DRAM are available.

Note: 1-GB DDR SYNCH DRAM not currently offered as after-market options.

Note: It is not necessary to add memory in pairs or kits. Memory upgrades are accomplished by adding single or multiple DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations.

845G chipset (256-MB)

DDR SYNCH DRAM DIMM NON-ECC MEMORY

STANDARD MEMORY

256-MB DIMM Standard

MAXIMUM MEMORY

Intel 845G Chipset supports up to 2-GB of DDR SYNCH DRAM. Platform can utilize 2-GB of memory when 1-GB DIMMs are available with the installation of optional DDR SYNCH DRAM Memory Kits.

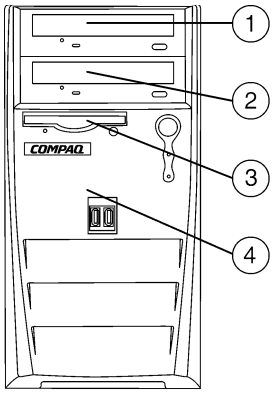
Memory		Slot	
		1	2
Standard	256-MB	256-MB	Empty
Maximum Memory when 1-GB available	2-GB	1-GB	1-GB

Note: All Compaq Evo D310v Desktop models contain two DIMM slots, but can only be upgraded to a maximum of 2-GB when 1-GB DDR SYNCH DRAM are available.

Note: 1-GB DDR SYNCH DRAM not currently offered as after-market options.

Note: It is not necessary to add memory in pairs or kits. Memory upgrades are accomplished by adding single or multiple DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations.

Storage



COMPAQ EVO DESKTOP D310V - MICROTOWER DRIVE SUPPORT

	Maximum Quantity Supported	Position Supported	Controller
MICROTOWER			
Diskette Drives	1	3	Super I/O
Tape Drives	2	1,2	IDE
CD-ROM Drives	2	1,2	IDE
DVD-ROM Drives	2	1,2	IDE
CD-RW Drives	2	1,2	IDE
Ultra ATA/100 Hard Drives	Up to 3	1,2,4	Ultra ATA/100
SCSI Hard Drives	Up to 3	1,2,4	SCSI

Note: SCSI hard drives require installation of a SCSI adapter card.

Note: Adding additional tape drives, DVD-ROM, CD-RW or hard drives will require the removal of other devices.

Technical Specifications – Audio

Integrated ADI 1981A Audio	**Type**	Integrated
	AC '97 Stereo Codec	Yes
	OPL3 FM Synthesis Support	Yes
	Sound Blaster Compatibility	Yes
	Audio Jacks	Mic-In (20-K ohm Input Impedance) Line-In (12-K ohm Input Impedance) Line-Out * (less than 800 ohms Output Impedance, expects at least a 10-K ohm load) Headphone-Out (2.5 Ohms Output Impedance, expects at least a 32 ohm load)
	Note: *Internal Speaker Amplifier is for Internal Speaker only. External Speakers need to be powered externally.	
	Sampling	7KHz-48KHz
	Compression	ADPCM, ESPCM
	Wavetable Syntheses (software)	Yes
	3D Positional Sound	No
	Analog Audio:	
	Number of Channels on Line-Out (mono/stereo)	Stereo (Left & Right channels)
	Internal Audio Speaker Power Rating	3W
	Internal Tuned Port Speaker	Yes
	External Speaker Jack (Line-Out)	Yes

Technical Specifications – Communications

Integrated Intel PRO/100 VM Network Connection with WOL	**Manufacturer**	Intel®	
	Interface	Intel SingleDriver™ technology (10/100-Mbps support)	
	Connector	RJ-45	
	Expansion bus architecture	PCI 2.2	
	Configuration	Network transfer rate	10BASE-T (Half-Duplex) 10 Mbps
			10BASE-T (Full-Duplex) 20 Mbps
			100BASE-TX (Half-Duplex) 100 Mbps
			100BASE-TX (Full-Duplex) 200 Mbps
		Data interface	PCI, 32-bit bus mastering
		I/O address	Integrated connectivity with Intel I/O Controller Hub (ICH2)-based platforms
	Software support	Instrumentation support for CIM/WBEM SNMP, DMI, PXE 2.0, Intel PROSet utility for installation and configuration, Alert on LAN Software Developer Kit and same code	
	Remote wakeup	PME through PCI 2.2, no cable required	
	Boot PROM support	Yes, Intel PRO/100 Boot Agent (PXE 2.0, RPL)	
	Special features	Digital adaptive equalization control, link status interrupt capability, boundary scan support, 3-port LED support (speed, link, activity), 10BASE-T auto polarity correction, diagnostic loopback mode, 1:1 transmit transformer ratio support, automatic detection of unplugged mode, remote monitoring (alerting)	
	Proactive alert technology	Alert on LAN (transmit functionality only)—requires Management Console software such as HP OpenView and Altiris, alert utilities for the management console, proxy client software, client configuration software	
	F12 BIOS support	Yes	
	Environmental requirements	Operating temperature	32° to 131° F (0° to 55° C)
		Operating humidity (non-condensing)	85% at 131° F (55° C)
		Altitude	10,000 feet (3,048 meters)
		Non-operating temperature	-40° to 158° F (-40° to +70° C)
		Altitude	5,000 feet (15,240 meters)
	Power	300 mW typical in active transmit mode; reduced power in unplugged mode (<50 mW); 3.3 V device	
	Power management	ACPI 1.0	
	Flash package	48-pin Shrink Small Outline Package (SSOP)	
	Network management	PCI 2.2	
	LED indicators	Three-port support (speed, link, and activity)	
	Standards compliance	IEEE 802.2, IEEE 802.3 and IEEE 802.3u, (100-Mbps ethernet), SCO UnixWare OpenDesktop and OpenServer, PC'99	

Technical Specifications – Graphics

Intel Extreme Graphics (Integrated with Intel 845G chipset)	**Bus Type**	Integrated
	AGP Interface	Supports a single 1.5v Accelerated Graphics Port Interface, Specification 2.0 compliant device
		Supports 1x/2x/4x data transfers and 2x/4x fast writes
		32-deep AGP request queue
		AGP signals multiplexed with two DVO ports
		Supports ADD (AGP Digital Display) cards
	Core frequency	200-Mhz
	3D setup and render engine	Discrete Triangles, Strips, and Fans support
		Indexed vertex and flexible vertex formats
		Pixel accurate fast scissoring and clipping operation
		Backface culling support
		Supports D3D and OGL pixelization rules
		Anti-aliased lines support
		Spirte points support
	High quality texture engine	Per pixel perspective corrected texture mapping
		Single pass texture compositing (multi-textures) at rate
		12 levels of detail MIP map sizes from 1x1 to 2Kx2K
		All texture formats including 32-bit RGBA
		Alpah and luminance maps
		Texture chroma-keying
		Bilinear, trilinear and anisotropic MIP-mapped filtering
		Cubic environment reflection mapping
		Embossed bump-mapping
		DOT3-based bump-mapping
		DXTn texture decompression
		FXT1 texture decompression
	3D graphics rasterization enhancements	200 megapixel / sec fill rate
		Flat and Gouraud shading
		Color alpha blending for transparency
		Vertex and programmable pixel fog and atmospheric effects
		Color specular lighting
		Z Bias support
		Dithering
		Anti-Aliasied lines
		16 and 24 bit Z buffering
		16 and 24 bit W buffering
		8 bit stencil buffering
		Double and triple render buffer support
		16 and 32 bit color
		Destination alpha
		Maximum 3D resolution supported 1600 x 1200 x 32 @ 85Hz
		Fast clear support

Technical Specifications – Graphics

Intel Extreme Graphics
(Integrated with Intel 845G chipset)
(continued)

2D Graphics	Optimized 256 bit BLT (Block Transfer) Engine
	GDI+ feature support
	Alpha stretch blither
	Anti aliased lines
	32-bit alpha blended cursor
	Programmable 3-color transparent cursor
	Color space conversion
	8, 16, and 32 bit color
	ROP support
Video DVD / PC-VCR	Dynamic Bob and Weave support for video streams
	Synclock display and TV out to video source
	Source resolution up to 720 x 480 with 2 vertical taps
	Software DVD at 30 fps (frames per second), full screen
Video Overlay	Single scalable overlay
	Multiple overlay functionality provided via stretch blitter (PIP, video conferencing, etc.)
	5 tap horizontal, 2 tap vertical filtered scaling
	Independent gamma correction
	Independent brightness / contrast / saturation
	Independent tint / hue support
	Destination color keying
	Source chroma keying
	Maximum source resolution: 720 x 480 (576)
	Maximum overlay display resolution: 1600 x 1200 x 32 @ 60Hz, 1280 x 1024 x 32 @ 85hz.
Display	Analog display support
	350Mhz integrated 24-bit RAMDAC
	Up to 2048 x 1536 @ 60Hz refresh
	Hardware color cursor support
	DD2CB compliant interface
	Multiplexed digital display channel
	Two channels multiplexed with AGP
	165Mhz dot clock on each 12 bit interface
	Can combine two 12 bit channels to form one 24 bit channel
	Supports flat panels up to 2048 x 1536 @ 60Hz or dCRT / HDTV @ 1920 x 1080 @ 85Hz.
	Supports hot plug and display
	Supports LVDS, TMDS transmitters or TV-out encoders
	ADD card utilizes AGP connector
	Three Display Control Interfaces (I2C/DDC) multiplexed on AGP

Refresh Rate with Memory Indicated

Resolution (Horizontal x Vertical)	Color Depth (Bits per Pixel)	Refresh Rate (Hz)
640 x 480	8,16 and 32	85, 85 and 85
800 x 600	8,16 and 32	85, 85 and 85
1024 x 768	8,16 and 32	85, 85 and 85
1280 x 1,024	8,16 and 32	85, 85 and 85
1600 x 1200	8,16 and 32	85, 85 and 85
1900 x 1440	8,16 and 32	75, 75 and N/A

Technical Specifications – Hard Drives

5400 rpm SMART III Ultra ATA/100 Hard Drives	**40-GB**	**Capacity**	40,000 MB	
		Rotational Speed	5400 rpm	
		Interface	Ultra ATA/100	
		Transfer Rate Synchronous (Maximum)	66 MB/s	
		Height	1 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Seek Time (typical reads, including settling)	Single Track	1.5 ms (2.9 ms quiet seek)
			Average	10.5 ms (12.4 ms quiet seek)
			Full-Stroke	23 ms (23 ms quiet seek)
		Physical Configuration	Logical Blocks	39,102,336
		Operating Temperature	41° to 131°F/5° to 55°C	
	20-GB	**Capacity**	20,000 MB	
		Rotational Speed	5400 rpm	
		Interface	Ultra ATA/100	
		Transfer Rate Synchronous (Maximum)	66 MB/s	
		Height	1 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Seek Time (typical reads, including settling)	Single Track	1.5 ms (2.9 ms quiet seek)
			Average	10.5 ms (12.4 ms quiet seek)
			Full-Stroke	23 ms (23 ms quiet seek)
		Physical Configuration	Logical Blocks	39,102,336
		Operating Temperature	41° to 131°F/5° to 55°C	

Technical Specifications – Input/Output Devices

Windows 104-key Keyboard	**Dimensions** (HxWxD)	34 x 460 x 170 (mm)	
		1.34 x 18.11 x 6.69 (inches)	
	Weight	0.86 kg	
		1.90 lbs.	
	Electrical	Operating Voltage	Voltage supplied to keyboard is 5 Vdc (+/- 0.25)
		Current Consumption	Under normal 5Vdc power supplied, typical current consumption is 50mA +/- 10% for the EMC IC with three LEDs
		Power Consumption	Under normal operation, Power Consumption is less than 0.30W
		Level and Timing	Level and timing of signals presented on data and clock pins should be compatible with both TTL or MOS termination on IBM compatible host PC motherboard.
		Pin Out Connector	PS/2 6 Pin DIN connection
		Electrostatic Discharge	IEC 801-2 (Continued functionality)
		Susceptibility	Contact discharge: 2, 4, 8 KV
			Air discharge: 2, 4, 8, 10,12, 15KV.
	Mechanical	Key Life	5 millions cycles under normal operation. After 5 millions return forces deviation less than 30% from original force.
		Cable Length	4.5 ft.
		Acoustics	Acoustic noise generated by key press should under 65dBA for space bar and 60dBA for other keys.
	Environmental	Operating Temperature	10 degree C to 50 degree C
		Non-operating Temperature	-30 degree C to 60 degree C
		Operating Humidity	Relative humidity under 90% without condensation
		Non-operating Humidity	Relative humidity under 95% without condensation
		Operating Shock	40g in 11ms duration
		Non-operating Shock	80g in 11ms duration
		Operating Vibration	Sinusoidal sweeps from 10 to 500 to 10Hz
			0.5 octave/min. 2.0g peak acceleration
		Non-operating Vibration	Sinusoidal sweeps from 10 to 500 to 10Hz
			0.5 octave/min. 4.0p peak acceleration

Technical Specifications – Input/Output Devices

Compaq 2-Button Scroll Mouse	**Scroll Wheel**	8 mm	
	Maximum Rotation Speed	30 mm/s	
	Switch Type	Light force micro-switch	
	Switch Life	1 million operations	
	Mechanical Life	Minimum 200,000 revolutions	
	Environmental	Operating Temperature	50° to 122° F/10° to 50° C
		Non-operating Temperature	–22° to 140° F/–30° to 60° C
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration
	Electrical	Operating Voltage	+5VDC ± 10%
		Power Consumption	15mA
		System Consumption	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC98	Functionally compliant
	Mechanical	Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s maximum
		Acceleration	100 in/s
		Switch Actuation	85 g nominal peak force
		Switch Life	1,000,000 operations (using Hasco modified tester)
		Cable Length	2 m
		PC98-99	Mechanically compliant
	Regulatory Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C-Tick	

Technical Specifications – Optical Storage

48X CD-ROM Drive	**Interface**	ATAPI IDE	
	Data buffer	16.6 Mbps	
	Data transfer rate	Sustained—150 Kbps minimum (audio)	Variable (CD)—3,000 to 7,200 Kbps
	Disk rotation technology	CAV (Constant Angular Velocity)	
	Access time (ms)	Random: <100 ms	Full-stroke seek: <150 ms
	Average access time	< 80 ms	
	Cache buffer (standard/maximum)	128 KB	
	Disk formats read	Multi-session Photo CD, multi-read CD-ROM, CD text, audio CD, CD-I, CD-RW, CD-R, CD-Extra, CD-ROM XA	
	Disk formats written	None	
	Disk capacity (CD)	650 MB	
	Block size	Mode 1—2,048 bytes Mode 2—2,340 / 2,336 bytes CD-DA—2,352 bytes CD-XA—2,328 bytes	
	Diameter	12 cm; 8 cm	
	Thickness	1.2 mm	
	Track pitch	1.6 µm	
	Audio output level	Line-out—0.7 V @ 47 Kohm	Headphone—0.6 V @ 32 ohm
	Startup time	<7 seconds (typical); < 30 seconds with multi-session	
	Operating conditions	Temperature	41° to 113° F (5° to 45° C)
		Relative humidity	10% to 80%
	Dimensions (HxWxD, maximum)	1.7 x 5.9 x 8.2 inches (4.3 x 15.0 x 20.8 cm)	
	Weight	2.6 pounds (1200 g)	
	MPEG playback graphics solution support	None	

Technical Specifications – Optical Storage

40X CD-RW Drive	**Interface**	ATAPI IDE	
	Media formats written	CD-R and CD-RW	
	Media capacity	700 MB	
	Write methods	Disc-at-once, track-at-once, session-at-once, fixed packet, and variable packet	
	Recording/playing time	80 minutes	
	Data transfer rates	Sustained	CD-RW write (1-4X media) —1,500 Kbps (4X)
			CD-RW write (4-10X media) —1,500 Kbps (10X)
			CD-RW read—1,500 Kbps (10X)
			Digital audio extraction (minimum) —1,500 Kbps (10X)
		Variable	CD-R write—2,400 to 4,800 Kbps (16X to 32X) (ZCLV)
			CD-ROM, CD-R read—1,500 to 6,000 Kbps (10X to 40X)
	Data transfer modes	ATA PIO mode 4—16.7 Mbps	
		ATA multi-word DMA mode 2—16.7 Mbps	
		ATA UltraDMA mode 0—16.7 Mbps	
		ATA UltraDMA mode 1—24 Mbps mode 2—33 Mbps (default)	
	Media formats read	audio, CD-ROM (modes 1 and 2), CD-ROM XA (mode 2, forms 1 and 2), single- or multi-session photo CD, CD-I, video CD, CD-text	
	Access times	Random	< 120 ms typical
		Full stroke	< 200 ms typical
	Start-up time	Single	< 7 seconds typical
		Multi-session	< 30 seconds typical
	Stop time	< 4 seconds	
	Block size	Mode 1—2,048/2,352 bytes	
		Mode 2, Form 1—2,048/2,328/2,336/2,340/2,352 bytes	
		Mode 2, Form 2—2,328/2,336/2,340/2,352 bytes	
		CD-DA—2,352/2,368 bytes	
	Disc diameter	120 mm or 80 mm	
	Track pitch	1.6 µm	
	Disc loading mechanism	Half-height, tray load	
	Operating conditions	Temperature	41° to 113° F (5° to 45° C) operating; –4° to 140° F
		Humidity	10% to 80%
	Mounting orientation	Horizontal or vertical	
	Dimensions	Fits in a standard 5.25-inch drive bay	
	Weight	1.2 kg (2.6 pounds)	
	Approvals/environmental	UL 94 and 1950, CSA, CE, FDA, FCC	

Technical Specifications – Removable Storage

1.44-MB Diskette Drive	**Diskette Size**	3.5 in.	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per diskette (high/low density)	1.44 MB/720 KB	
	Drive Supported	One	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500/250 Kb/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	169/94 ms
		Settling Time	15 ms
		Latency Average	100 ms

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